Course Resources:

7th Grade Math Chapter Outcomes.docx
7th Grade Advanced Math Objectives Additional chp.docx

Unit	State Standards	Outcomes	Essential Questions	Essential Skills	Assessments	Faith Integration
7 Math Advanced						
Chapter 1 The Real Number System *(updated 6/7/19)*	7.NS.A.1(A) Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. •a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. •b. Understand p + q as the number located a distance $|q|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. •c. Understand subtraction of rational numbers as adding the additive inverse, p - q = p + (-q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. •d. Apply properties of operations as strategies to add and subtract rational numbers. 7.NS.A.2(A) Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. •a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. •b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then -(p/q) = (-p)/q = p/(-q). Interpret quotients of rational numbers by describing real-world contexts. •c. Apply properties of operations as strategies to multiply and divide rational numbers. •d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.		1-1 How can you use integers to represent the velocity and the speed of an object? 1-2 Is the sum of two integers positive, negative, or zero? How can you tell? 1-3 How are adding integers and subtracting integers related? 1-4 Is the product of two integers positive, negative, or zero? How can you tell? 1-5 Is the quotient of two integers positive, negative, or zero? How can you tell?	Define and explain what an integer is. Use a number line to graph integers and their absolute values. Use a number line to compare integers and absolute value. Find the sum of integers with the same sign. Find the sum of integers with different signs. Find the difference of integers with the same signs. Find the difference of integers with different signs. Find the product of integers with the same signs and with different signs. Find the quotient of integers with the same signs and with different signs. Evaluate expressions with integers using order of operations.	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 2 Rational Numbers *(updated 6/7/19)*	7.NS.A.1(A) Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. •a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. •b. Understand p + q as the number located a distance $|q|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. •c. Understand subtraction of rational numbers as adding the additive inverse, p - q = p + (-q). Show that the		2-1 How can you use a number line to order rational number numbers? 2-2 How can you use what you know about adding integers to add rational numbers? 2-3 How can you use what you know about subtracting integers to subtract rational numbers? 2-4 Why is the product of two negative	Identify rational numbers, repeating decimals, and terminating decimals. Write rational numbers in decimal form. Write a decimal as a fraction. Use a number line to graph and order rational numbers. Find the sum of rational numbers. Evaluate expressions with rational numbers. Find the difference of	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the

	distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. •d. Apply properties of operations as strategies to add and subtract rational numbers. **7.NS.A.2(A)** Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. •a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. •b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts. •c. Apply properties of operations as strategies to multiply and divide rational numbers. •d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	rational numbers positive?	rational numbers. Find the distance between numbers on a number line. Find the quotient of rational numbers. Find the product of rational numbers.		amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 3 Expressions and Equations *(updated 6/7/19)*	**7.EE.A.1(A)** Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. **7.EE.A.2(A)** Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."		3-1 How can you simplify an algebraic expression? 3-2 How can you use algebra tiles to add or subtract algebraic expressions? 3-3 How can you use algebra tiles to solve addition and subtraction equations? 3-4 How can you use multiplication or division to solve equations? 3-5 How can you use algebra tiles to solve a two-step equation?	Identify parts of terms and like terms in an expression. Simplify algebraic expressions by combining like terms. Find the sum and difference of linear expressions. Use prime factorization to factor our greatest common factor in expressions. Use the addition property of equality to solve equations. Use the subtraction property of equality to solve equations. Write an equation from a word problem or verbal sentence. Use the multiplication property of equality to solve equations. Use the division property of equality to solve equations. Solve two-step equations by combining like terms and isolating the variable.	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 4 Inequalities *(updated 6/7/19)*	**7.EE.B.4(A)** Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. •a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution,		4-1 How can you use a number line to represent solutions of an inequality? 4-2 How can you use addition or subtraction to solve an inequality? 4-3 How can you use	Identify the different inequality symbols and verbal phrases that they represent. Write an inequality from a verbal phrase. Substitute a number and solve the inequality to	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end."

	identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? •b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.		multiplication or division to solve an inequality? 4-4 How can you use an inequality to describe the dimension of a figure?	identify it as a solution or not. Graph inequalities. Use the addition property of inequality to solve inequalities. Use the subtraction property of inequality to solve inequalities. Use the multiplication property of inequality to solve inequalities. Use the division property of inequality to solve inequalities. Solve two- step inequalities and graph them.		Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 5 Ratios and Proportions *(updated 6/7/19)*	7.RP.A.1(A) Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2 / 1/4 miles per hour, equivalently 2 miles per hour. 7.RP.A.2(A) Recognize and represent proportional relationships between quantities. •a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. •b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. •c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$. •d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.		5-1 How do rates help you describe real-life problems? 5-2 How can proportions help you decide when things are "fair"? 5-3 How can you write a proportion that solves a problem in real life? 5-4 How can you use ration tables and cross products to solve proportions? 5-5 How can you compare two rates graphically? 5-6 How can you use a graph to show the relationships between two quantities that vary directly? How can you use an equation?	Define ratio, rate, unit rate, and complex fraction. Write ratios in three different forms. Write a rate to compare to measurements. Find a rate using a ratio table. Find the rate from a graph. Define proportion and proportional. Decide when two quantities are proportional using equivalent fractions or cross products. Graph proportional relationships in a coordinate plane. Write proportions using a table. Solve proportions using mental math, multiplication property of equality, and cross products. Define slope, find it, and interpret it. Define direct variation and the constant of proportionality and identify the direct variation of a graph.	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 6 Percents *(updated 6/7/19)*	7.RP.A.3(A) Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error. 7.EE.B.3(A) Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of		6-2 How can you order numbers that are written as fractions, decimals, and percents? 6-3 How can you use models to estimate percent questions? 6-4 How can you use an equivalent form of the percent proportion	Write a fraction and decimal as a percent. Write a percent as a fraction and decimal. Compare and order fractions, decimals, and percents. Calculate a percent, part, or whole using the percent proportion. Calculate a percent, part,	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has

	answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.		to solve a percent problem? 6-5 What is a percent decrease? What is a percent of increase? 6-6 How can you find discounts and selling prices? 6-7 How can you find the amount of simple interest earned on a savings account? How can you find the amount of interest owed on a loan?	or whole using the percent equation. Define percent of increase and decrease and identify percent changes. Find the percent of increase and decrease. Define and find a percent error. Define discount and mark up. Calculate the sale price, original price, or selling price of an item. Calculate the interest earned, annual interest rate, amount of time, or principal amount of a loan.		made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 7 Constructions and Scale Drawings *(updated 6/7/19)*	7.G.A.1(A) Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. 7.G.A.2(A) Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.		7-1 What can you conclude about the angles formed by two intersecting lines? 7-2 How can you classify two angles as complementary or supplementary? 7-3 How can you construct triangles? 7-4 How can you classify quadrilaterals? 7-5 How can you enlarge or reduce a drawing proportionally?	Identify adjacent angles, vertical angles, and congruent angles. Use adjacent angles and vertical angles to calculate a missing measures. Construct angles using a protractor. Define complementary and supplementary angles and classify pairs of angles as complementary, supplementary, or neither. Use complementary and supplementary angles to calculate missing measures. Classify triangles using angle measures and side lengths. Calculate the missing angle measure of a triangle using the formula: $x + y + z = 180^\circ$. Construct triangles using given angle measures and a protractor. Construct triangles using side measurements and a protractor. Classify quadrilaterals based on their side measures, segment construction, and angle measure. Calculate the missing angle measure of a quadrilateral using the formula: $w + x + y + z = 180^\circ$. Construct a quadrilateral using side lengths, angle measures, and a	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.

			protractor. Define scale model and scale drawing. Find an actual distance or scale distance using the scale and a proportion. Define and calculate the scale factor.		

Chapter 8 Circles and Area
 	
(updated 6/7/19)
	7.G.B.4(A)
	    Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
	7.G.B.6(A)
	    Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
			8-1 How can you find the circumference of a circle?
			8-2 How can you find the perimeter of a composite figure?
			8-3 How can you find the area of a circle?
			8-4 How can you find the area of a composite figure?
				Draw and identify the different parts of a circle.
				Calculate the radius and diameter of a circle.
				Calculate the circumference of a circle.
				Find the perimeter of a semicircle.
				Explain what composite figures are and estimate their perimeter using grid paper.
				Calculate the perimeter of composite figures.
				Calculate the area of a circle.
				Calculate the area of a semicircle.
				Estimate the are of a composite figure using grid paper.
				Calculate the are of composite figures.
					Informal observation
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Chapter 9 Surface Area and Volume
 	
(updated 6/7/19)
	7.G.A.3(A)
	    Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
	7.G.B.4(A)
	    Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
			9-1 How can you find the surface area of a prism?
			9-2 How can you find the surface area of a pyramid?
			9-3 How can you find the surface area of a cylinder?
			9-4 How can you find the volume of a prism?
			9-5 How can you find the volume of a pyramid?
				Draw nets of rectangular and triangular prisms.
				Calculate the surface are of prisms.
				Calculate the lateral surface area or prisms.
				Draw nets for triangular and square pyramids.
				Calculate the surface area of pyramids.
				Calculate the lateral surface area of pyramids.
				Draw nets for cylinders.
				Calculate the surface area a cylinder.
				Calculate the lateral surface area of a cylinder.
				Calculate the volume prisms.
				Calculate the volume of pyramids.
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Chapter 10 Probability and Statistics
 	
(updated 6/7/19)
	6.SP.A.1(A)
	    Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.
	6.SP.A.2(A)
	    Understand that a set of data collected to answer a
			10-1 In an experiment, how can you determine the number of possible results?
			10-2 How can you describe the likelihood of an event?
			10-3 How can you use
				Define experiment, outcome, event, and favorable outcome.
				Identify different outcomes and count the outcomes.
				Define probability and calculate the probability of and event.
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	statistical question has a distribution which can be described by its center, spread, and overall shape.		10-3 How can you use relative frequencies to find probabilities? 10-4 How can you find he nu,ber of possible outcomes of one or more events? 10-5 What is the difference between dependent and independent events? 10-6 How can you determine whether a sample accurately represents a population? 10-7 How can you compare data sets that represent two populations?	and event. Interpret and explain what the probability means in a real-life context. Define and calculate the experimental probability of an event. Define and calculate the theoretical probability of an outcome. Compare and contrast experimental and theoretical probability. Find the sample space using diagrams and the Fundamental Counting Principle. Calculate the probability of compound events. Identify independent and dependent events. Calculate the probability of independent, dependent, and compound events. Identify and explain why a sample might be unbiased or biased. Determine whether conclusions made based on a sample are valid. Make predictions using samples. Compare populations using dot plots, measures of center, and measures of variation. Use random samples to compare populations.		Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.

Chapter 11
Transformations
 	
(updated 6/7/19)
	8.G.A.1(A)
	    Verify experimentally the properties of rotations, reflections, and translations:
	    •a. Lines are taken to lines, and line segments to line segments of the same length.
	    •b. Angles are taken to angles of the same measure.
	    •c. Parallel lines are taken to parallel lines.
	8.G.A.2(A)
	    Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
	8.G.A.3(A)
	    Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
	8.G.A.4(A)
	    Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
			11.1 How can you identify congruent triangles?
			11.2 How can you arrange tiles ot make a tessellation?
			11.3 How can you use reflections to classify a frieze pattern?
			11.4 What are the three basic ways to move an object in a plane?
			11.5 How can you use proportions to help make decisions in art, design, and magazine layouts?
			11.6 How do changes in dimensions of similar geometric figures affect the perimeters and the areas of the figures?
				Name corresponding parts of congruent figures
				Identify congruent figures.
				Identify translations.
				Translate figures in the coordinate plane.
				Translating figures using coordinates.
				Identify reflections.
				Reflect figures in the x-axis and y-axis.
				Identify a rotation.
				Rotate figures.
				Describe a sequence of transformations.
				Identify similar figures.
				Find unknown measures of similar figures.
				Find ratios of perimeters and areas.
				Use proportions to find perimeters and areas.
				Identify a dilation.
				Dilate a figure.
					Informal observation
					Exit Tickets
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		11.7 how can you enlarge or reduce a figure in the coordinate plane?	Describe a sequence of transformations.		
Chapter 12 Angles and Triangels *(updated 6/7/19)*	8.G.A.5(A) Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.	12.1 How can you describe angles formed by parallel lines and transversals? 12.2 How can you describe the relationships among the angles of a triangle? 12.3 How can you find the sum of the interior angle measures and the sum of the exterior angle measures of a polygon? 12.4 How can you use angles to tell whether triangles are similar?	Find angle measures. Use corresponding angles. Identify alternate interior and alternate exterior angles. Use interior angle measures. Find exterior angle measures. Find the sum of interior angle measures. Find an interior angle measure of a polygon. Identify similar triangles. Use indirect measurement.	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 13 Graphing and Writing Linear Equations *(updated 6/7/19)*	8.EE.B.5(A) Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed. 8.EE.B.6(A) Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.	13.1 How can you recognize a linear equation? How can you draw its graph? 13.2 How can you use the slope of a line to describe the line? 13.3 How can you describe the graph of the equation $y=mx$? 13.4 How can you describe the graph of the equation $y=mx+b$? 13.5 How can you describe the graph of the equation $ax+by=c$? 13.6 How can you write an equation of a line when you are given the slope and the y-intercept of the line? 13.7 How can you write an equation of a line when you are given the slope and a point on the line?	Graph a linear equation. Graph a horizontal and vertical line. Find the slope of a line, including a horizontal and vertical line. Identify parallel and perpendicular lines. Graph and compare proportional relationships. Write and use a direct variation equation. Identify slopes and y-intercepts. Graph linear equations in slope-intercept form, standard form. Write equations in slope-intercept form. Write an equation using a slope and a point, or two points.	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.

Chapter 14 Real Numbers and the Pythagorean Theorem *(updated 6/7/19)*	8.NS.A.1(A) Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. 8.NS.A.2(A) Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., pi2). For example, by truncating the decimal expansion of sqrt2, show that sqrt2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations. 8.EE.A.2(A) Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that sqrt2 is irrational. 8.G.B.6(A) Explain a proof of the Pythagorean Theorem and its converse. 8.G.B.7(A) Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. 8.G.B.8(A) Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.		14.1 How can you find the dimensions of a square or a circle when you are given its area? 14.2 How is the cube root of a number different from the square root of a number? 14.3 How are the lengths of the sides of a right triangle related? 14.4 How can you find decimal approximations of square roots that are not rational? 14.5 In what other ways can you use the Pythagorean Theorem?	Find square and cube roots. Evaluate expressions involving square and cube roots. Evaluate algebraic expressions. Find the length of a hypotenuse. Find the length of a leg of a right triangle. Classify real numbers. Approximate square roots. Compare real numbers. Approximate the value of an expression. Write a repeating decimal as a fraction. Identify right triangles. Find the distance between two points using the distance formula.	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 15 Volume and Similar Solids *(updated 6/7/19)*	8.G.C.9(A) Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.		15.1 How can you find the volume of a cylinder? 15.2 How can you find the volume of a cone? 15.3 How can you find the volume of a sphere? 15.4 When the dimensions of a solid increase by a factor of k, how does the surface area change? How does the volume change?	Find the volume and height of a cylinder. Find the volume and height of a cone. Find the volume and radius of a sphere. Find the volume of a composite solid. Identify similar solids. Find missing measures in similar solids. Find the surface area and volume of similar solids.	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.
Chapter 16 Exponents and Scientific Notation *(updated 6/7/19)*	8.EE.A.1(A) Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$. 8.EE.A.3(A) Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9, and determine that the world population is more than 20 times larger. 8.EE.A.4(A) Perform operations with numbers expressed in scientific notation, including problems where both decimal and		16.1 How can you use exponents to write numbers? 16.2 how can you use inductive reasoning to observe patterns and write general rules involving properties of exponents? 16.3 How can you divide two powers that have the same base? 16.4 How can you evaluate a nonzero	Write expressions using exponents. Evaluate expressions including exponents using the order of operations. Multiply powers with the same base. Find a power of a power. Find a power of a product. Divide powers with the same base. Simplify expressions into a power. Evaluate and simplify	Informal observation Exit Tickets Section Quizzes Chapter Tests	"He has made everything beautiful in its time. He has also set eternity in the human heart; yet no one can fathom what God has done from beginning to end." Ecclesiastes 3:11 God has made this world for us and has made us stewards of His creation. Math helps us understand

	scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.		number with an exponent of zero? How can you evaluate a nonzero number with a negative integer exponent? 16.5 How can you read numbers that are written in scientific notation? 16.6 How can you write a number in scientific notation? 16.7 How can you perform operations with numbers written in scientific notation?	expressions with negative exponents. Identify numbers written in scientific notation. Write numbers from scientific notation to standard form. Compare numbers in scientific notation. Write large and small numbers in scientific notation. Add, subtract, multiply, and divide numbers in scientific notation.	just some of the amazing things that God has created like shapes, ratios, the movement of planets and space.